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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,001	10/15/2001	Takeshi Uchida	566.39787CX1	9500

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EXAMINER

UMEZ ERONINI, LYNETTE T

ART UNIT PAPER NUMBER

1765

DATE MAILED: 02/07/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/976,001		Applicant(s) UCHIDA ET AL.	
Examiner Lynette T. Umez-Eronini		Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 2 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☒ Certified copies of the priority documents have been received in Application No. 09/763,891.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The information disclosure statement filed 10/15/01 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because In Paper No., 4, references "AM", "AN", "AO" AND "AP" were not submitted and an English equivalence or translation were not provided. In Paper No. 5, references, "US 5,770,095, WO 98/04646, and JP-A-5-228528" were not properly cited on FORM PTO-1449. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609 ¶ C(1).

### ***Specification***

2. The disclosure is objected to because of the following informalities: On page 13, line 5, "ozoe" is misspelled.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 2 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

On line 3, "(3) a metal etching rate inhibitor" is indefinite because its meaning is unclear. Applicant's specification has failed to disclose and give examples of a metal etching rate inhibitor. With no guidance as to what is "a metal etching rate inhibitor," for the purpose of examination, "a corrosion inhibitor" would be searched.

***Claim Rejections – 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki et al. (US 5,607,718).

Sasaki discloses a solution mixture of an amine and hydrogen peroxide (same as applicant's oxidizing agent) water and no polishing particles were used in polishing aluminum plugs, in re Hayashi et al., (International Electron Devices Meeting Technical Digest, 1992, p. 976), (column 2, lines 43-50). The said solution reads on,

a polishing solution for metal comprising (1) an additive which permits chemical mechanical polishing to be carried out without solid abrasive grains, (2) and oxidizing agent, and (3) water.

Applicant has referred to, "protective-film forming agent may preferably be at least one selected from . . . compounds such as . . . alkyl amines . . ." (Specification, page 6, lines 16-20) and "polishing slurries for metal which are used in CMP are commonly comprised of an oxidizing agent and solid abrasive particle or powder and also an oxidized-metal dissolving agent and a protective-film forming agent which are optionally further added" (Specification, page 3, lines 3-7). Since the said compound are optionally added, then any one of them would inherently read on, applicant's additive, which permit chemical mechanical polishing to be carried out without solid abrasive grains, as in the claimed invention.

7. Claim 2 is rejected under 35 U.S.C. 102(b) as being anticipated by Sasaki et al. (US 5,770,095).

Sasaki teaches a polishing agent which contains:

(1) an oxidizing agent (column 4, lines 50-52);

an amino acetic acid and/or an amidosulfuric acid (column 4, lines 50-52), which is the same as applicants, (2) an oxidized-metal dissolving agent;

benzotriazole (column 4, lines 50-52), which is capable of forming a chelate compound of a complex with the film material (i.e. metal, column 8, lines 2-4) to be etched (column 8, lines 20-24) and which "functions as a protection film to suppress

oxidization or corrosion (of the Cu film) . . . in the presence of an etching agent having a chemical corrosion range in which Cu can be etched at a high rate" would inherently read on, (3) a metal etching rate inhibitor; and  
(4) water (column 4, lines 50-52).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lynette T. Umez-Eronini whose telephone number is 703-306-9074. The examiner can normally unavailable on the First Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benjamin Utech can be reached on 703-308-3836. The fax phone numbers for the organization where this application or proceeding is assigned are 703-972-9310 for regular communications and 703-972-9311 for After Final communications.

ltue  
January 25, 2003

  
BENJAMIN L. UTECH  
SUPERVISORY PATENT EXAMINER  
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